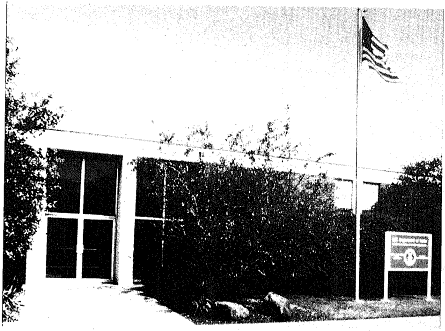
OSHA Training Institute Catalog of Courses



Fiscal Year 1990

Welcome to the OSHA Training Institute

Harvey E. Harris
Director
Office of Training and Education

Zigmas Sadauskas
Director
OSHA Training Institute

In 1971, a national safety and health law became a reality. The implementation of this legislation created a need for training, met initially through courses conducted by the U.S. Department of Labor in Washington, D.C., and later, at the OSHA Training Institute in Rosemont, Illinois.

A steady increase in the demand for training necessitated a move in 1977 to improved facilities in Des Plaines, Illinois. The addition of safety and industrial hygiene laboratories vastly increased the capability of the Institute to meet the need for hands-on training.

The initial challenge faced by the Institute was to train a large number of compliance officers in OSHA procedures and enforcement policies. Parallel to this was the similar need to train representatives from the private sector.

These challenges have been met—only to be replaced by a far greater one to the Agency, namely, to broaden our efforts to emphasize all of the activities envisioned by the law. This requires a mix of programs to include standards, enforcement, abatement assistance, training grants, State plans, educational efforts and consultation. Also, intensified broad-based safety and health activity in other Federal agencies has vastly increased the task which OSHA faces.

Implicit in these challenges is the need for change; particularly the need to establish a constructive and cooperative attitude to promote ". . . safe and healthful working conditions . . ." in the workplace.

To those who attend our courses, we extend a welcome and an invitation to make use of the expertise of the Institute staff and facility resources. We trust you will take advantage of what is offered, and return to your job better prepared to meet your occupational safety and health responsibilities.

Zigmas Sadauskas

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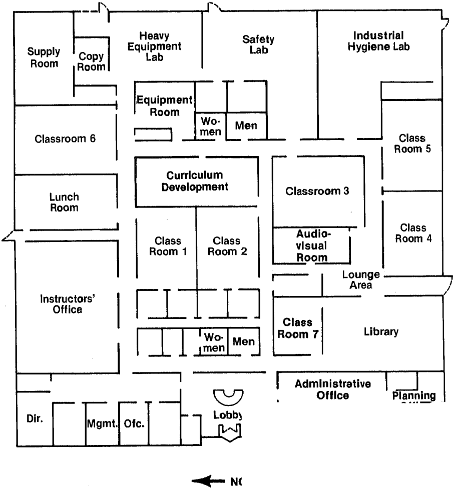
OSHA Training Institute

Floor Plan



Information about the OSHA Training Institute

To provide for uniform and comprehensive training of Occupational Safety and Health Officers, a national training facility was established.

On January 17, 1972, the OSHA Training Institute was dedicated. The original facility was located in Rosemont, Illinois.

As the scope of training activities expanded, additional space was acquired within this facility. By 1976, it was apparent that larger contiguous quarters were necessary.

DEPARTMENT OF LABOR UNITED STATES OF AMERICA

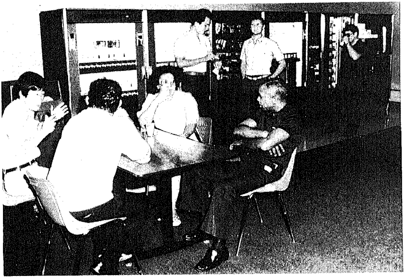
In November 1977, the Institute was relocated to its present site in Des Plaines, Illinois. The present facility encompasses 35,000 square feet of classroom, laboratory and office space.

In September 1982, OSHA's Office of Training and Education was consolidated with the Institute in the Des Plaines facility. This move combined the activities of program planning, curriculum development and grants management with those already in place at the Institute.

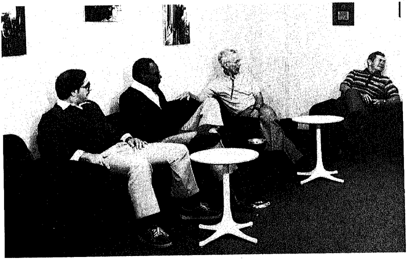
The Institute's full use of audiovisual aids and laboratory facilities provides wide-ranging opportunities for the hands-on application of course work. Various training aids and materials are used by staff to provide instruction in hazards and related methods of abatement.

The OSHA Training Institute represents the Agency's commitment to reduce workplace injuries and illnesses through training and education.

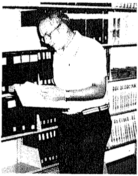
On arrival at the Institute, students check in at the reception desk in the lobby. Course registration is confirmed, and classrooms are assigned.



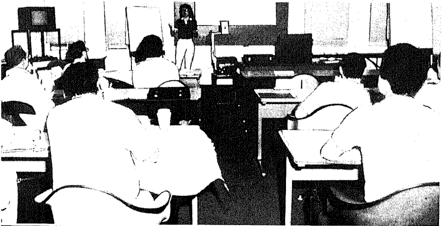
Before classes start, or during breaks, students can share information with other students or staff in the lunchroom or student lounge area.

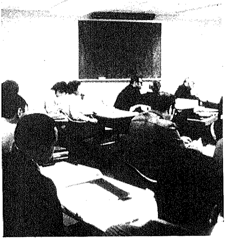


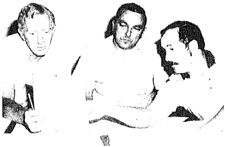
The library, which has over 2,000 textbooks, plus periodicals, reference files and course manuals, is open for general use from 8:00 a.m. to 4:30 p.m. Safety and health materials, which have been developed under various Department of Labor programs, are available for viewing.



x classrooms are used for lec- res and demonstrations and e fully equipped with audio- sual equipment.



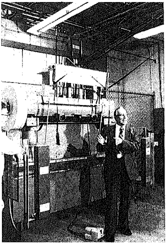




Class workshops encourage interaction among students. The sharing of information is a significant part of making each course a success.

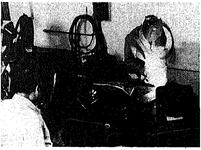
Heavy Equipment Laboratory

n the heavy equipment laboratory the student has the opportunity to gain an "operator's eye" view of various machines and protective devices commonly used in general industry. Shown below are some of the training aids used in this laboratory.



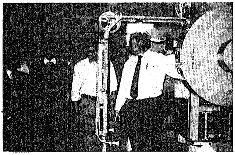
Press Brake

This press brake incorporates several different approaches to a sometimes difficult guarding problem. Also shown are power transmission components enclosed as required by OSHA standards.



Industrial Welding

In this area, actual welding practices are demonstrated for the students to illustrate common types of welding and hazard control measures.



Punch Press

Students have the opportunity to view the operation of a press equipped with an electronic guard gate as well as the traditional pull-back devices and two-hand trips.

OSHA Lineman

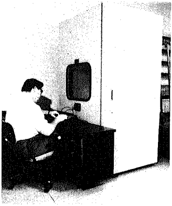
Personal protective equipment and other safety equipment used in utility line work are displayed by the simulated "OSHA lineman."

Safety Laboratory

The safety laboratory contains demonstration aids that can be used for both safety and industrial hygiene training. Some of the equipment used in he laboratory is shown below.

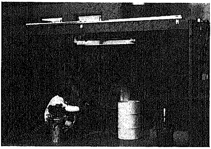
Woodworking Shop

This shop is used to demonstrate machine guarding, methods of electrical wiring, and as a sound generator for noise measurement.



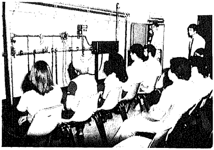
Audiometric Test Booth

Shown is one of two audiometric test booths used in the Institute's noise courses to train and certify students as audiometric technicians.



Industrial Spray Booth

The spray booth is used to demonstrate different kinds of paint spray equipment. It is also used to exhibit proper electrical wiring, switches and fixtures for this type of installation. Another use is the measurement of airflow.

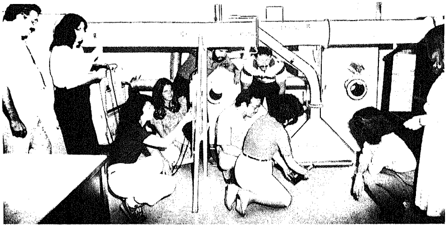


Flame Propagation

The flame propagation unit is used to demonstrate the principles of explosions in confined spaces and the effectiveness of explosion-proof electrical equipment.

Industrial Hygiene Laboratory

The industrial hygiene laboratory provides for hands-on use of sampling devices as well as demonstrations of highly sophisticated technical machinery.



Ventilation System

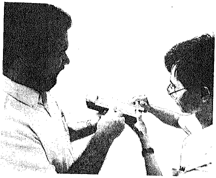
This working model ventilation system has interchangeable components to allow students to take and evaluate airflow measurements of various system designs.

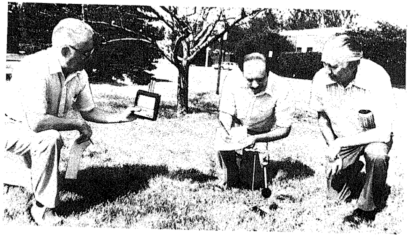
Laser

Students observe demonstrations of an industrial laser, and use instruments to measure the power output of the beam.

utdoor Workshops

ome activities require an outdoor
vironment to properly simulate
ork conditions. The grounds sur-
unding the Institute are used to
commodate these activities.





Course Application Procedures

All course inquiries and applications should be directed to the U.S. Department of Labor, Occupational Safety and Health Administration, Training Institute, 1555 Times Drive, Des Plaines, Illinois 60018, Attention: Registrar.

Phone—Commercial: 312-297-4810
FTS: 353-2500.

OSHA Field Personnel

Regional Administrators shall nominate personnel directly to the Registrar.

OSHA National Office Personnel

National Office personnel shall register with the Registrar through the OSHA Office of Employee Development.

State and Other Governmental Personnel

Personnel from 18(b) States, or personnel from States with 7(c)(1) consultation agreements, shall be nominated for training by Regional Administrators directly to the Registrar.

Direct nominations from State officials will be accepted if that procedure has been approved by the Regional Administrator.

Applicants from non-plan States and other State agencies, counties and city governments shall enroll directly with the Registrar.

Other Federal Department and Agency Personnel

Federal departments and agencies shall nominate their personnel directly to the Registrar.

Private Sector

Employers, employees and their representatives may directly contact the Registrar to enroll for courses.

Student Information

Lodging

Students are responsible for their own lodging arrangements. The Registrar will forward a current list of nearby hotels (which provide special rates and transportation for those attending the Institute) with enrollment confirmation or upon request. Students should inform the hotel that they are attending the Institute.

Most hotels listed offer airport as well as Institute transportation.

Attire

Casual business attire is appropriate for class attendance. Some courses will include field exercises which require appropriate clothing or personal protective equipment. Further information is available in the current Training Institute schedule of courses.

Mail

If mail is sent to the Institute, it should include the number of the course which the student is attending. When mail is received, a note is posted on the bulletin board in the lobby area.

Mail envelopes and franked labels are provided in the lunchroom for the purpose of mailing **official** course materials. Items of a personal nature may be mailed through the Post Office located one block west of the Institute.

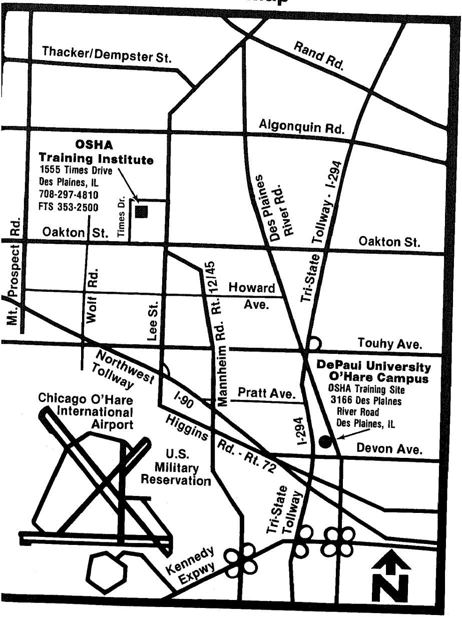
Telephone

Telephone messages will be taken and posted in the lobby area. Our policy is to interrupt classes **only** in the event of **emergency** situations.

Outgoing **official business** calls may be made during breaks or lunch periods.

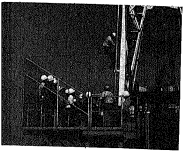
FTS telephones are located in the lunchroom. Commercial telephones are located both in the lunchroom and the lobby area.

Travel Map


Thacker/Dempster St.
Rand Rd.
Algonquin Rd.
OSHA
Training Institute
1555 Times Drive
Des Plaines, IL
708-297-4810
FTS 353-2500
Times Dr.
Des Plaines River Rd.
Tollway - I-294
Oakton St.
Oakton St.
Mt. Prospect Rd.
Wolf Rd.
Lee St.
Rt. 12/45
Howard Ave.
Tri-State
Touhy Ave.
Mannheim Rd.
DePaul University
O'Hare Campus
OSHA Training Site
3166 Des Plaines
River Road
Des Plaines, IL
Northwest Tollway
I-90
Pratt Ave.
Chicago O'Hare
International
Airport
Higgins Rd. - Rt. 72
I-294
Devon Ave.
U.S.
Military
Reservation
Tri-State Tollway
Kennedy Expwy
N

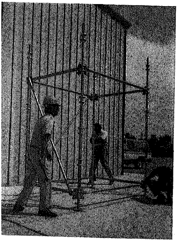
OFF-SITE INSTRUCTION

When practical, classes are scheduled at sites which have actual or simulated conditions that are similar to those that our students will find in industry. Some of these facilities are:



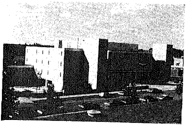
The Abilene Regional Technical Center of Texas A&M University in Abilene, Texas. At this facility, students are trained in:

1. Terminology common to oil and gas well drilling;
2. Methods, techniques and equipment unique to drilling operation, servicing, stimulation and logging;
3. Recognition of safety and health hazards encountered in well drilling, operation and maintenance.



The Laborers' Training Institute in Denver, Colorado. At this facility, students are trained in:

1. Hazards encountered in the use of scaffolds;
2. Guarding methods for employee protection on scaffolding;
3. Types of fall protection;
4. Hazardous conditions related to excavations and trenching;
5. Methods of bracing and shoring;
6. Soil mechanics.



The University of Wisconsin College of Engineering at Plattville, Wisconsin. At this facility, students are trained in:

1. Compositions of concrete;
2. Procedures for the taking of concrete samples;
3. Methods and procedures of testing samples;
4. Concrete curing processes;
5. Concrete pouring techniques;
6. Concrete containment forms.

The OSHA Salt Lake City Analytical Laboratory in Salt Lake City, Utah. At this facility, students are trained in:

1. Identification of appropriate analytical methods for chemical agents commonly encountered in the workplace;
2. Interpretation of analytical results;
3. Problems common to the sampling and analysis of workplace contaminants.

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COURSE DESCRIPTIONS AND OBJECTIVES

Course Number: 100

Course Title:

INITIAL COMPLIANCE COURSE FOR SAFETY OFFICERS

Course Description: The course introduces students to the Occupational Safety and Health Act and its implications for safety compliance officers, enabling them to effectively assist the Area Office in safety inspection activities. Participants are provided with a basic understanding of OSHA regulations, the Field Operations Manual, safety standards, OSHA forms and procedures, hazard recognition, and abatement techniques.

Course Highlights:

1. Students participate in a mock inspection and then complete the proper forms (OSHA-1, 1A and 1B).
2. Students demonstrate proper opening and closing procedures in a role play exercise.

Course Objectives: Students should be able to:

1. Explain the Occupational Safety and Health Act and its application to employers and employees.
2. Select proper inspection procedures according to the OSHA Field Operations Manual, policies, and directives.
3. Identify selected safety hazards and appropriate abatement methods.
4. Locate and apply appropriate general industry and construction standards.
5. Complete the necessary OSHA inspection forms.

Course Number: 101

Course Title:

SAFETY HAZARD RECOGNITION FOR INDUSTRIAL HYGIENISTS

Course Description: This is an introductory course in safety hazards for industrial hygienists. Hazard recognition and the criteria for citation or referral to a safety compliance officer are discussed. The course includes industrial and construction standards.

Course Highlights: A walk-through inspection and hands-on experience with safety equipment and processes are provided.

Course Objectives: Students should be able to:

1. Identify common safety hazards in general industry and on construction sites.
2. Identify sources of supplementary information on the cause and control of safety hazards (National Fire Protection Association Codes, National Safety Council) and use the information to abate the hazards.
3. Select and cite appropriate safety standards when hazards are detected.
4. Make proper referrals to Safety Compliance Officers.

Course Number: 120

Course Title:

INITIAL COMPLIANCE COURSE FOR INDUSTRIAL HYGIENISTS

Course Description: The course introduces students to the Occupational Safety and Health Act and the requirements for industrial hygienists, enabling them to effectively assist the Area Office in health inspection activities. Participants are provided with a basic understanding of OSHA regulations, the Field Operations Manual, health standards, hazard recognition, and abatement techniques.

Course Highlights: Laboratories permit students to calibrate and use full shift and direct reading sampling instruments.

Course Objectives: Students should be able to:

1. Explain the Occupational Safety and Health Act and its application to employers and employees.
2. Explain and apply OSHA's health standards, policies, and procedures according to the OSHA Field Operations Manual.
3. Complete the necessary inspection forms.
4. Select, calibrate, and use appropriate industrial hygiene equipment.
5. Identify selected health hazards and appropriate abatement methods.

Course Number: 121

Course Title:

INTRODUCTION TO INDUSTRIAL HYGIENE FOR SAFETY PERSONNEL

Course Description: The course introduces students to the general concepts of industrial hygiene. Topics include: identification of common health hazards such as air contaminants and noise, use of industrial hygiene sampling instruments, control methods for health hazards, and criteria for referral.

Course Highlights: Laboratories allow students to calibrate and use sampling and monitoring instruments.

Course Objectives: Students should be able to:

1. Explain the general concepts and principles of industrial hygiene.
2. Identify common health hazards.
3. Demonstrate calibration methods for industrial hygiene sampling equipment.
4. Describe accepted control techniques for health hazards.
5. Describe procedures for making proper health referrals.

Course Number: 121A

Course Title:

INTRODUCTION TO INDUSTRIAL HYGIENE FOR SAFETY PERSONNEL

Course Description: This shortened version of Course Number 121 introduces the student to the general concepts of industrial hygiene. Topics include: identification of common health hazards such as air contaminants and noise, control methods for hazards, and use of industrial hygiene sampling instruments.

Course Highlights: Hands-on calibration and use of sampling and monitoring instruments in laboratories.

Course Objectives: Students should be able to:

1. Explain the general concepts and principles of industrial hygiene.
2. Identify common health hazards.
3. Calibrate selected industrial hygiene sampling equipment.
4. Describe accepted control techniques for health hazards.

Course Number: 141

Course Title:

INSPECTION TECHNIQUES AND LEGAL ASPECTS

Course Description: This is an introductory course for safety and health compliance officers having less than two years experience with OSHA. The course emphasizes the skills needed to conduct effective inspections, assemble legally sufficient case files, and assist in litigation of OSHA cases. It also examines the inspection process from the selection of an establishment through the presentation of testimony at review commission hearings.

Course Highlights: Workshops, role playing, and group activities are used to provide meaningful experience in a controlled setting. The course emphasizes compliance with OSHA policies, procedures, and directives.

Course Objectives: Students should be able to:

1. Identify elements of a legally sufficient case file.
2. Describe proper conduct at a hearing.
3. Describe all steps in the inspection process.

Course Number: 142

Course Title:

11(c) BASIC INVESTIGATOR TRAINING COURSE

Course Description: The course introduces new 11(c) investigators to the OSH Act, regulations, and policies as they relate to discrimination investigations. Section 405 of the Surface Transportation Assistance Act of 1982 which is administered by OSHA is also covered. Participants are provided with interviewing and report writing techniques.

Course Highlights: Participants will be involved in role playing and the videotaping and review of the interviewing process.

Course Objectives: Students should be able to:

1. Explain relevant portions of the OSH Act and Section 11(c)/405 regulations.
2. Utilize appropriate policies and procedures in the investigation and processing of Section 11(c)/405 complaints.
3. Select appropriate screening techniques in determining whether to accept inquiries for field investigation.
4. Determine the appropriate scope of the investigation and select proper investigative techniques.
5. Apply interviewing techniques to effectively obtain the necessary information.
6. Summarize the investigative evidence and analyze the merits based on established case law in an acceptable written format.

Course Number: 143

Course Title:

INTRODUCTION TO OSHA FOR NON-TECHNICAL PERSONNEL

Course Description: The course is designed for OSHA administrative, clerical, and other staff who would not normally attend technical courses. It provides an overview of OSHA history, terminology, structure, and operations. Topics covered include the OSH Act, the inspection process, and various programs within OSHA.

Course Highlights: Students observe a mock OSHA inspection to demonstrate the inspection process.

Course Objectives: Students should be able to:

1. Describe the OSH Act.
2. Use and understand OSHA terminology.
3. Explain OSHA's structure and organization.
4. Explain various programs conducted by OSHA.
5. Describe the inspection process.

Course Number: 150

Course Title:

BASIC ON-SITE CONSULTATIVE TRAINING

Course Description: The course introduces students to 29 CFR 1908 and to techniques that can improve basic consultative skills. Topics covered include: the 1908 regulations, interpretation of the on-site consultation program manual, communication and human relations skills in the consultative process, and report writing techniques. Procedures for evaluating an employer's safety and health program and for providing program assistance are discussed. Requirements for exemption through consultation are also covered.

Course Highlights:

1. Individual and group exercises apply effective writing principles.
2. A workshop is provided on evaluating employer safety and health programs.

Course Objectives: Students should be able to:

1. Identify 29 CFR 1908 regulations.
2. Apply communication and human relations skills to facilitate the consultative process.
3. Write clear and concise reports concerning the results of the consultative visit.
4. Encourage employer participation in the consultation program.
5. Assist employers in improving safety and health programs.

Course Number: 151

Course Title:

ANALYTICAL LABORATORY ORIENTATION FOR STATE CONSULTANTS

Course Description: The course introduces students to the procedures used by the Wisconsin Occupational Health Laboratory for sampling, recording, mailing and analyzing samples. Topics include: selecting sampling equipment, packaging and mailing samples, and recording sampling data. The course is designed to improve communications between field representatives and the laboratory.

Course Highlights: Participants tour the Wisconsin Occupational Health Laboratory.

Course Objectives: Students should be able to:

1. Select proper sampling equipment for various air contaminants.
2. Select and use the proper forms that must accompany a laboratory sample.
3. Send properly packaged samples to the laboratory.

Course Number: 152

Course Title:

EFFECTIVE WRITTEN COMMUNICATION

Course Description: The course focuses on written reports and correspondence and is intended to improve written communication skills. A review of sample documents assists students in developing an in-depth understanding of constructing, reviewing, and improving written communications. Topics include: readability, mechanics, visual impact, and bottom-line reporting.

Course Highlights: Individual and group exercises apply effective writing principles.

Course Objectives: Students should be able to:

1. Understand strategies available for making written messages clear.
2. Develop a language for talking about writing.
3. Write memos and reports that are effective and efficient.

Course Number: 200

Course Title:

CONSTRUCTION STANDARDS

Course Description:	Participants are provided with basic information on construction standards, construction hazards and control, health hazards in construction, trenching and excavation, electrical hazards in construction, concrete, cranes, scaffolds, and heavy construction equipment. The interface between the Construction Safety Act and the Occupational Safety and Health Act is also covered.
Course Highlights:	1. Various construction tools and equipment are demonstrated. 2. A walk-around inspection is conducted at an actual construction site.
Course Objectives:	Students should be able to: 1. Identify various types of construction processes, materials, equipment, and machinery. 2. Differentiate between safe and unsafe construction equipment, machinery, and work practices. 3. Identify hazards inherent in selected construction operations. 4. Select the proper regulation for citation purposes. 5. Identify the correct methods or procedures used for abatement of selected hazards.

Course Number: 201

Course Title:

HAZARDOUS MATERIALS

Course Description: The course covers OSHA standards and integrates materials from other consensus and proprietary standards that relate to hazardous materials such as flammable and combustible liquids, compressed gases, LP-gas, cryogenic liquids, anhydrous ammonia, and explosives. Coverage includes related processes--such as welding, spraying, and dipping--as well as electrical equipment, ventilation, and fire protection.

Course Highlights: Demonstrations are included on safety equipment and devices for handling flammable liquids and LP gas, on spray paint booths and equipment, and on handling cryogenic liquids.

Course Objectives: Students should be able to:

1. Identify methods of detecting unsafe storage conditions for hazardous materials.
2. Explain electrical and ventilation factors which may contribute to the creation or abatement of hazardous conditions.
3. Relate hazardous conditions and/or unsafe procedures to the appropriate standards for abatement action.
4. Describe the necessary precautions for hazardous operations, such as dispensing of flammable and combustible liquids.
5. Describe proper abatement techniques for selected industrial hazards.

Course Number: 201A

Course Title:

HAZARDOUS MATERIALS

Course Description:	This shortened version of Course Number 201 covers OSHA standards and integrates materials from other consensus and proprietary standards that relate to hazardous materials. Topics include: flammable and combustible liquids, compressed gases, LP-gas, and cryogenic liquids. Related processes such as spraying and dipping are covered, as well as electrical equipment.
Course Highlights:	Demonstrations are included on safety equipment and devices for handling flammable liquids and LP-gas, on spray paint booths and equipment, and on handling cryogenic liquids.
Course Objectives:	Students should be able to:

1. Describe methods for detecting unsafe storage conditions for hazardous materials.
2. Explain electrical factors which may contribute to the creation or abatement of hazardous conditions.
3. Relate hazardous conditions and/or unsafe procedures to the appropriate standards for abatement action.
4. Specify the necessary precautions for hazardous operations, such as dispensing of flammable and combustible liquids.
5. Describe proper abatement techniques for selected industrial hazards.

Course Number: 202

Course Title:

ACCIDENT INVESTIGATION

Course Description: The course familiarizes students with accident investigation techniques and methods. It provides a thorough approach to investigation which is readily adaptable to individual needs. Major topics include: identification of sources of evidence, evaluation and preservation of evidence, cause analysis techniques, and interviewing techniques.

Course Highlights:

1. Current evaluation techniques are introduced.
2. Workshop practice highlights cause analysis techniques.

Course Objectives: Students should be able to:

1. Describe the techniques of examination, evaluation, and preservation of evidence.
2. Identify sources of evidence.
3. Describe recognized mapping and photographic techniques for documentation of evidence.
4. Recognize interviewing techniques to effectively extract the information required to support the case file.
5. Describe the use of causal analysis as a standard methodology.

Course Number: 203

Course Title:

BASIC ELECTRICAL PRINCIPLES

Course Description: This course is intended for students with no electrical background. The course will familiarize students with hazards found in electrical installations and equipment. Emphasis is placed upon controlling these hazards by the application of OSHA standards and requirements. Major topics covered are: basic electricity, series and parallel circuits, grounding requirements, overcurrent protection, and inspection procedures.

Course Highlights:

1. Demonstrations are provided of various electrical characteristics.
2. Training in electrical test equipment is covered.
3. Workshops focus on hazard recognition.

Course Objectives: Students should be able to:

1. Recognize hazards and apply the appropriate standard for abatement.
2. Describe the operation of electrical test equipment.
3. Discuss the effects of electrical current on the human body with respect to voltage, current path, and the duration of exposure.

Course Number: 204

Course Title:

MACHINERY AND MACHINE GUARDING STANDARDS

Course Description: The course familiarizes the student with various types of common machinery and the related safety standards. Guidance is provided with respect to the hazards associated with various types of machinery. The course presents an approach to machine inspection which enables participants to recognize hazards such as those created by points of operation, ingoing nip points, rotating parts, flying chips, and sparks, and provides some options to achieve abatement.

Course Highlights:

1. Field trips to machine shops are provided to enhance teaching.
2. Operation of equipment in Institute laboratories.

Course Objectives: Students should be able to:

1. Identify common machines found within a broad spectrum of industries.
2. Identify hazards which occur in or on machinery.
3. Select the appropriate OSHA standard which applies to a hazard.
4. Present options to achieve abatement.

Course Number: 204A

Course Title:

MACHINERY AND MACHINE GUARDING STANDARDS

Course Description: This shortened version of Course Number 204 familiarizes the student with various types of common machinery and the related safety standards. Guidance is provided with respect to the hazards associated with various types of machinery. The course presents an approach to machine inspection which enables participants to recognize hazards such as those created by points of operation, ingoing nip points, rotating parts, flying chips, and sparks, and provides some options to achieve abatement.

Course Highlights: Demonstration of various machines and guarding methods in the laboratories.

Course Objectives: Students should be able to:

1. Recognize common machinery hazards.
2. Recommend some abatement methods.
3. Use the appropriate standards.
4. Recognize and identify various machines.
5. Understand basic machinery terms.

Course Number: 205

Course Title:

CRANES AND MATERIALS HANDLING FOR CONSTRUCTION

Course Description: The course introduces students to the various types of mobile and tower cranes used in construction operations. Participants are provided basic information on crane operation, inspection and maintenance, and on wire rope, chain slings, sheaves, drums, blocks, and hooks. Appropriate OSHA and ANSI standards, as well as other related requirements specific to each type of crane, are also discussed.

Course Highlights:

1. A one-day field trip provides the opportunity to inspect mobile cranes.
2. Demonstrations highlight the kinds and sizes of wire rope and chain slings and the use of each.
3. Workshops on use of load rating charts.

Course Objectives: Students should be able to:

1. Identify various types of materials handling equipment-- including self erecting cranes, mobile cranes, and hydraulic cranes-- and the hazards associated with the design, use and maintenance of this equipment.
2. Differentiate between safe and unsafe procedures in crane use and the maintenance of stability.
3. Identify causes of wire rope and chain sling failure.
4. Select proper standards for citation purposes.
5. Describe appropriate abatement methods for selected crane operations.

Course Number: 206

Course Title:

MARITIME STANDARDS

Course Description: This course introduces the student to maritime operations and standards, including the jurisdictional considerations in enforcement. The longshoring segment covers vessel and equipment nomenclature, and the application of the longshoring and marine terminal standards. The shipyard segment covers vessel repair, construction, and the application of the shipyard standards. Commercial diving and marine construction are also covered.

Course Highlights: Field exercises at a ship or landship (for longshoring orientation) and a shipyard (for shipyard orientation).

Course Objectives: Students should be able to:

1. Identify specific types of maritime operations, equipment, and machinery.
2. Identify hazards associated with longshoring and shipyard operations.
3. Describe jurisdictional boundaries, scope and application of OSHA standards.
4. Select appropriate standards.
5. Provide abatement assistance.

Course Number: 207

Course Title:

FIRE PROTECTION AND LIFE SAFETY

Course Description:	The course introduces students to potential fire hazards and to the recognition of proper emergency procedures. Topics include: the chemistry of fire, types and effectiveness of extinguishing agents, portable fire extinguishers, fixed extinguishing systems, fire detection and alarm systems, means of egress, emergency action plans, fire brigades, and fire prevention plans. 29 CFR 1910 (Subparts E and L), the NFPA Life Safety Code, and other referenced NFPA Standards provide the basis for the course.
Course Highlights:	Fire suppression systems are demonstrated both in the lab and at a nationally recognized testing laboratory.
Course Objectives:	Students should be able to:

1. Recognize potential fire hazards.
2. Describe emergency egress facilities and procedures.
3. Describe components of detection and alarm systems.
4. Identify the function and use of various types of fire extinguishers and fire extinguishing systems.
5. Identify appropriate organization, training, and equipment for fire brigades.

Course Number: 207A

Course Title:

FIRE PROTECTION AND LIFE SAFETY

Course Description: This shortened version of Course Number 207 introduces the student to the recognition of potential fire hazards and proper emergency procedures. Topics include: chemistry of fire, types and effectiveness of extinguishing agents, means of egress, detection and alarm systems, fire brigades, emergency plans, and the Life Safety Code (NFPA 101). 29 CFR Part 1910, Subparts E and L and referenced NFPA Codes provide the basis for the course.

Course Highlights: Relevant codes and standards are applied to practical situations in the workplace.

Course Objectives: Students should be able to:

1. Describe fire emergency plans.
2. Identify appropriate means of egress from buildings.
3. Describe fire protection systems.
4. List the manual fire protection methods and equipment.
5. Identify means of egress and fire protection standards.

Course Number: 208

Course Title:

CRANES AND MATERIALS HANDLING FOR GENERAL INDUSTRY

Course Description: The course introduces students to the various types of overhead cranes, hoists, and powered industrial trucks used in general industry. Participants are provided with basic information concerning overhead and gantry cranes, outdoor storage bridge crane operations, wire rope, slings, and crane inspection and maintenance procedures. Coverage includes the operation and maintenance of powered industrial trucks. Appropriate OSHA and ANSI standards and related requirements are discussed.

Course Highlights:

1. Demonstrations highlight the kinds and sizes of wire rope and chain slings and the uses of each.
2. A one-day field trip provides the opportunity to inspect overhead cranes.

Course Objectives: Students should be able to:

1. Identify various types of materials handling equipment--including fork lifts, and overhead and gantry cranes--and the hazards associated with the design, use, and maintenance of this equipment.
2. Differentiate between safe and unsafe procedures in crane use and maintenance.
3. Identify causes of wire rope and chain sling failure.
4. Select proper standards for citation purposes.
5. Describe appropriate abatement methods for selected crane operations.

Course Number: 220

Course Title:

INDUSTRIAL NOISE

Course Description: This course introduces the student to the problem of occupational noise - its nature, hazards, evaluation and control. Topics include physics of sound, effects of noise, measurements, vibration analysis, noise control techniques, hearing conservation, audiology, and current OSHA noise compliance policy and inspection procedures.

Course Highlights: Laboratories are included instrument calibration and use, frequency analysis, impulse/impact noise measurement, noise dosimetry, and audiometric testing.

Course Objectives: Students should be able to:

1. Describe the anatomy, physiology, and pathology of the human ear.
2. Perform noise measurements according to accepted procedures.
3. Identify control techniques for various types of noise sources.
4. Identify methods for evaluating the effectiveness of hearing conservation programs.
5. Explain the factors used to determine the adequacy of personal protective equipment.

Course Number: 221

Course Title:

PRINCIPLES OF INDUSTRIAL VENTILATION

Course Description: The course covers the principles of industrial ventilation as a means of controlling hazardous air contaminants. Topics include: the classification of ventilation systems, fundamentals of air flow, fans, ventilation system surveys, design of ventilation systems, and OSHA policy and standards.

Course Highlights:

1. Numerous laboratory sessions utilize the Training Institute's simulated industrial ventilation system.
2. Students obtain hands-on use of various air-flow measuring equipment.

Course Objectives: Students should be able to:

1. Use various air-flow measuring equipment such as pitot tubes, manometers, velometers, and other air-flow meters.
2. Calculate dilution air requirements.
3. Design a ventilation system using the velocity pressure method.
4. Localize problems within a ventilation system.
5. Apply appropriate OSHA ventilation standards.

Course Number: 222

Course Title:

RESPIRATORY PROTECTION

Course Description: The course covers the requirements for the establishment, maintenance, and monitoring of respirator programs. Topics include: OSHA standards, NIOSH certifications, 30 CFR Part 11, and ANSI standards.

Course Highlights: Hands-on training laboratories are included on respirator selection, qualitative and quantitative fit testing, and the use of a large array of respirators and support equipment.

Course Objectives: Students should be able to:

1. Describe the proper respirator for different types of air contaminants.
2. Perform qualitative and quantitative fit tests.
3. Inspect respirators and SCBA's for defects.
4. Clean and maintain air purifying respirators.
5. Interpret 29 CFR 1910.134, the Respiratory Protection Standard.
6. Explain the certification procedure incorporated in 30 CFR Part 11.

Course Number: 222A

Course Title:

RESPIRATORY PROTECTION

Course Description: This shortened version of Course Number 222 covers the requirements for the establishment, maintenance, and monitoring of a respirator program. Topics include: OSHA and ANSI standards, NIOSH certifications, terminology and medical requirements.

Course Highlights: Participation of students in laboratories on respirator selection, qualitative fit testing, and the use of a large array of respiratory and support equipment for hands-on training.

Course Objectives: Students should be able to:

1. Select the proper respirator for different types of air contaminants.
2. Perform qualitative fit tests.
3. Inspect respirators for defects.
4. Clean and maintain air purifying respirators.
5. Interpret 29 CFR 1910.134, the Respiratory Protection Standard.

Course Number: 223

Course Title:

INDUSTRIAL TOXICOLOGY

Course Description: The course introduces students to the principles of toxicology as they apply to industrial processes. Topics include: recent toxicological data related to OSHA standards, biological monitoring, an update on current methods of toxicological testing, bio-transformation, and a listing of chemical hazards encountered in specific industries and their effects on employees.

Course Highlights: Emphasis is placed on recently reported findings for occupational carcinogens and toxins affecting the reproductive system and on recently expanded health standards.

Course Objectives: Students should be able to:

1. Describe terms used in the field of toxicology.
2. Explain the toxic action of chemical agents commonly encountered in the workplace.
3. Describe the toxicology of carcinogens, mutagens, and teratogens.
4. Describe and apply toxicological principles when monitoring the workplace for chemical hazards.
5. Identify OSHA standards in the area of toxicology.

Course Number: 224

Course Title:

LABORATORY SAFETY AND HEALTH

Course Description: The course introduces students to the hazards associated with laboratories and the control of these hazards. Topics include: the causative factors of accidents, biohazards, flammable hazards, chemical labeling and storage, emergency procedures, and laboratory safety codes and standards.

Course Highlights: The proper operation of laboratory hoods with related instrumentation is evaluated by inspecting actual laboratory areas.

Course Objectives: Students should be able to:

1. Describe potential hazards which can exist in a laboratory.
2. Identify methods for evaluating the level of potential hazards.
3. Identify effective controls for use in the laboratory.
4. Describe emergency procedures recommended for use in the laboratory.
5. Explain laboratory safety codes and standards.

Course Number: 225

Course Title:

PRINCIPLES OF ERGONOMICS

Course Description: The course introduces students to the application of ergonomic principles for the reduction of stress and strain to an employee's body. Major topics include: work physiology, biomechanics, anthropometry, repetitive motion disorders, manual lifting and back injury problems, and workstation and equipment design.

Course Highlights:

1. Job and equipment design laboratory sessions aid in the analysis of manual lifting tasks.
2. Demonstrations are provided of instrumentation and equipment used in the field of ergonomics.

Course Objectives: Students should be able to:

1. Describe terms relative to ergonomics.
2. Describe the impact of job and workplace design on employee safety and health.
3. Identify environmental and physiological characteristics that may contribute to cumulative trauma disorders.
4. List improvements in job, workstation, and equipment design that can reduce the potential for musculoskeletal injury.
5. Analyze manual lifting tasks and estimate reasonable lifting limits.

Course Number: 225A

Course Title:

PRINCIPLES OF ERGONOMICS

Course Description: This shortened version of Course Number 225 introduces the student to the application of ergonomic principles for the reduction of stresses and strains to the employee's body. Topics include: work physiology, biomechanics, anthropometry, repetitive motion disorders, and manual lifting and back injury problems.

Course Highlights: Participation in industrial case studies covering analysis of work stations and equipment; laboratory sessions in manual lifting; and demonstrations of instrumentation and equipment used in the field of ergonomics.

Course Objectives: Students should be able to:

1. Describe the impact of job and workplace design on employee safety and health.
2. List improvements in job, workstation and equipment designs that can reduce the potential for musculoskeletal injury.
3. Analyze manual lifting tasks and estimate reasonable lifting limits.

Course Number: 226

Course Title:

CONFINED SPACE ENTRY

Course Description: The course is designed to increase student's knowledge of hazards associated with confined space entry and environment. Topics include: hazards associated with entry procedures, personal protective equipment, and appropriate atmosphere testing equipment and its related limitations.

Course Highlights:

1. Flame propagation is demonstrated.
2. Hands-on training is provided for explosion meters, oxygen meters, and other test equipment.
3. Workshops focus on actual fatality case studies.

Course Objectives: Students should be able to:

1. Define terms specific to confined space operations.
2. Identify current standards governing confined space entry procedures.
3. Describe hazards associated with confined spaces.
4. Demonstrate the proper operation of certain testing instruments used to determine air quality and explain their limitations.
5. Describe appropriate ventilation, PPE, and emergency procedures that are necessary for entry into confined spaces.

Course Number: 227

Course Title:

PRINCIPLES OF TEMPERATURE STRESS

Course Description: The course introduces students to the hazards associated with temperature stress in the workplace. Topics include: the body's regulation of internal temperature, medical problems associated with heat stress and cold stress, measuring the degree of employee stress, and methods of reducing employee exposure.

Course Highlights: Numerous instrument laboratories allow students to measure exposure and the extent of temperature stress.

Course Objectives: Students should be able to:

1. Define terms used in evaluating temperature stress situations.
2. Identify and describe the function of the body's internal temperature regulation system.
3. List medical problems relating to temperature stress.
4. Measure the degree of worker stress.
5. Evaluate the level of temperature stress using established criteria.

Course Number: 228

Course Title:

RECOGNITION, EVALUATION AND CONTROL OF IONIZING RADIATION

Course Description: The course introduces students to the fundamental principles of ionizing radiation. Topics include: industrial sources, screening devices, interpretation of standards, biological effects, calibration and proper usage of radiation instruments, and identification of radioactive materials.

Course Highlights: Hands-on laboratories afford the use of screening and monitoring instrumentation.

Course Objectives: Students should be able to:

1. Define ionizing radiation units and terminology.
2. Calibrate and use various monitoring and surveying instruments.
3. Explain the limitations of instruments used in measuring ionizing radiation.
4. Describe abatement methods for ionizing radiation exposures.
5. Explain and interpret related standards.
6. Describe biological effects of ionizing radiation.
7. Identify various radioactive materials.

Course Number: 229

Course Title:

LASER SAFETY

Course Description: The course covers the basic principles of laser operation. Topics include optics, biological effects of lasers, and hazard analysis and control. Laboratory sessions focus on the proper use of instruments and their limitations, and measurements of laser radiation.

Course Highlights: An overview highlights current laser uses in industry.

Course Objectives: Students should be able to:

1. Define terms used in laser operations.
2. Describe various lasers and laser systems used in general industry.
3. Identify potential hazards from lasers.
4. Describe methods of protection and engineering control.
5. Explain the proper usage and limitations of instruments for monitoring lasers.

Course Number: 230

Course Title:

RECOGNITION, EVALUATION AND CONTROL OF MICROWAVE AND RADIOFREQUENCY RADIATION

Course Description: The course introduces the properties of media, the electromagnetic spectrum, energy deposition in media, and microwave and long-line communication. Biological effects and hazard analysis and control will also be covered.

Course Highlights: Laboratory sessions focus on the proper usage and limitations of instruments and on proper shielding for microwave and radiofrequency radiation.

Course Objectives: Students should be able to:

1. Define terms specific to microwave and radiofrequency radiation.
2. Describe microwave and radiofrequency radiation devices used in general industry.
3. Identify potential hazards from microwave and radiofrequency radiation.
4. Describe methods of protection and engineering controls.
5. Explain the proper usage and limitations of instruments for monitoring microwave and radiofrequency radiation.

Course Number: 231

Course Title:

RECOGNITION, EVALUATION, AND CONTROL OF ASBESTOS

Course Description: The course provides detailed information on the safety and health principles of asbestos abatement and control. The course covers: health effects, worker protection, control methods, work practices, safety considerations during abatement, and industrial hygiene sampling methods. Training will stress OSHA regulations and their application in controlling asbestos at the job site.

Course Highlights: Hands-on training is provided in asbestos control methods, and with respirators and other personal protective equipment.

Course Objectives: Students should be able to:

1. Define terms associated with asbestos.
2. Identify OSHA regulations, policies, and compliance procedures concerning asbestos.
3. Describe control procedures used on asbestos abatement jobs.
4. Identify asbestos health effects and worker protection methods.
5. Describe safety and health hazards encountered on abatement jobs.
6. List laboratory techniques for identifying asbestos fibers.
7. Discuss heat stress in asbestos removal.

Course Number: 231A

Course Title:

RECOGNITION, EVALUATION AND CONTROL OF ASBESTOS

Course Description: This shortened version of Course Number 231 provides information on the safety and health principles of asbestos abatement and control. Topics include: OSHA asbestos regulations, health effects, worker protection, control methods, work practices, safety considerations during abatement and industrial hygiene sampling methods.

Course Highlights: Hands-on laboratory allows students to learn asbestos control methods.

Course Objectives: Students should be able to:

1. State provisions of OSHA's asbestos standards for general industry and the construction industry.
2. Discuss health effects of asbestos and related materials.
3. List asbestos abatement methods and personal protective equipment for the worker.
4. List safety considerations during asbestos abatement.
5. Describe OSHA's personal air sampling procedures for asbestos.

Course Number: 232

Course Title:

WORKPLACE BACK INJURIES

Course Description: The course covers the application of biomechanical, physiological, and job design principles to the problem of workplace back injuries. The incidence and costs of back injuries are discussed, as well as methods for rehabilitating an injured worker. The relative merits of injury prevention strategies, including worker training, conditioning, and the use of job redesign, are examined.

Course Highlights:

1. Laboratory sessions focus on the evaluation of manual lifting tasks.
2. Material handling equipment is discussed and demonstrated.

Course Objectives: Students should be able to:

1. Describe variables that affect the risk of injury from a manual lifting task.
2. Discuss the merits of traditional injury prevention strategies.
3. Analyze manual lifting tasks and estimate reasonable lifting limits.
4. Describe improvements in work procedures to reduce the potential for back injuries.
5. Identify appropriate OSHA policies relative to workplace back injuries.

COURSE NUMBER: 233

COURSE TITLE:

INDOOR AIR QUALITY

Course Description: This course assists health and safety professionals in evaluating indoor air quality. Focus is placed on the nature and causes of indoor air problems in office building environments as well as on investigative approaches and solutions. Topics covered include current air quality and ventilation standards, HVAC system design and operations, survey instrumentation and measurements, control techniques, sources of available help, and special issues such as asbestos, biological contamination, and radon.

Course Highlights: Students obtain hands-on experience with current evaluative instrumentation.

Course Objectives: Students should be able to:

1. Identify the causes and effects of poor/unacceptable indoor air quality (IAQ).
2. Explain the basic function, design types and operation of HVAC systems.
3. Select appropriate instrumentation to evaluate IAQ problems.
4. Discuss the appropriate applications of IAQ and ventilation standards in the workplace.
5. Specify corrective actions to resolve IAQ problems.

Course Number: 234

Course Title:

BIOHAZARDS

Course Description: This course assists health and safety professionals in evaluating biohazards in the workplace. Focus is placed on work practices, personal protective equipment, infectious waste handling, control techniques, sampling instruments and measurements, and current applicable OSHA standards.

Course Highlights: Demonstration of sampling instruments and discussion of inspection techniques and issues.

Course Objectives: Students should be able to:

1. Discuss appropriate biohazard guidelines and policies.
2. Identify work practices and procedures associated with biohazards.
3. Identify personal protective equipment necessary to prevent and minimize biohazard exposure.

Course Number: 241

Course Title:

FUNDAMENTALS OF SAFETY AND HEALTH MANAGEMENT

Course Description: The course introduces students to the principles of safety and health management, emphasizing the basic elements of an effective safety and health program. Topics include: job safety analysis, recordkeeping and data collection, accident investigation, and safety and health training. Tools and techniques are presented to assist participants in the evaluation of an employer's safety and health program.

Course Highlights:

1. Workshops focus on job safety analysis, accident investigation, and safety and health program development.
2. Numerous training aids are provided to participants which can later be used for consultative or training purposes.

Course Objectives: Students should be able to:

1. Define terms used in safety and health management.
2. Describe the principles of safety and health management.
3. Explain concepts that support accident prevention.
4. Identify the cost benefit of safety and health programs.
5. Evaluate safety and health program effectiveness.

Course Number: 242

Course Title:

OSHA TRAINER COURSE

Course Description: The course is designed for personnel who may conduct occupational safety and health training presentations. Students evaluate their personal training and learning styles. The steps of the training design process, from a needs assessment through evaluation of the training are reviewed. Participants are taught to supplement their presentations with appropriate visual aids. Various delivery techniques are explored, and participants demonstrate their acquired skills before the class.

Course Highlights: Students have the opportunity to develop and present short oral presentations which are evaluated by the entire class according to principles learned in class.

Course Objectives: Students should be able to:

1. Describe the elements of various delivery techniques.
2. Develop a lesson plan covering the material to be presented.
3. Select appropriate visual aids.
4. Present an effective training session.
5. Conduct an evaluation of training results.

Course Number: 243

Course Title:

POLICIES AND PROCEDURES FOR THE VOLUNTARY PROTECTION PROGRAM

Course Description: The course is designed for OSHA Regional and Area Office personnel with responsibilities for Voluntary Protection Programs (VPP). Procedures and policies for implementing the VPP manual are introduced. Topics include: promotion of VPP and the recruitment of new applicants, pre-approval reviews, the role of the contact person, and program evaluation procedures.

Course Highlights: Individual and group workshops allow students to explore various aspects of VPP activities.

Course Objectives: Students should be able to:

1. Promote the VPP and recruit applicants.
2. Organize, conduct, and document pre-approved reviews.
3. Function as an effective contact person.
4. Evaluate participants' progress.

Course Number: 300

Course Title:

SAFETY AND HEALTH FOR OIL AND GAS WELL OPERATIONS

Course Description: The course familiarizes students with the safety and health aspects of oil and gas well operations. It includes a discussion of the terminology, processes, equipment and materials associated with oil and gas well operations and focuses on special safety and health hazards and methods of abatement.

Course Highlights: A two-day, off-site visit to an operating drilling rig provides hands-on experience; participants operate oil drilling equipment and perform operations such as making up and breaking out pipe drilling joints, throwing the spinning chain, placing and removing drilling pipe, and working from the derrick.

Course Objectives: Students should be able to:

1. Define terminology associated with the drilling industry.
2. Identify various types of drilling rigs.
3. Describe hazards associated with oil and gas well operations.
4. Identify appropriate OSHA standards for hazards found in oil and gas well operations.
5. Provide abatement assistance related to the hazards found in this industry.

Course Number: 301

Course Title:

EXCAVATION, TRENCHING AND SOIL MECHANICS

Course Description: The course presents detailed information on the safety aspects of excavation and trenching. Students are introduced to practical soil mechanics and how to relate this to the stability of shored and unshored slopes and walls of excavations.

Course Highlights: Testing methods are demonstrated, and when weather permits, a one-half-day field exercise is conducted.

Course Objectives: Students should be able to:

1. Explain basic concepts of soil mechanics and how environmental factors affect soil stability.
2. Identify hazardous conditions related to excavations and excavating equipment.
3. Describe sloping and shoring requirements and the proper use of trench shields.
4. Determine the slope of trench walls to ensure that employees receive maximum protection.
5. Describe methods for making field tests of soil, including the use of the pocket penetrometer, and torvane shears.

Course Number: 302

Course Title:

TUNNELING AND UNDERGROUND OPERATIONS

Course Description: This course focuses on safety and health in underground operations. Students are introduced to tunneling from sinking the initial shaft to completion of the project. Topics include: inspection procedures, drill and blast methods, boring machines, and muck hauling. Special attention is focused on the health hazards encountered in confined space atmospheres.

Course Highlights: Demonstrations are provided of roof control materials, blasting materials, personal protective equipment, and confined space test equipment.

Course Objectives: Students should be able to:

1. Define terminology associated with tunneling and excavation operations.
2. Identify and describe the function of equipment and processes employed in underground operations.
3. Name common safety and health hazards that are encountered in underground operations.
4. Determine the OSHA standards that have been violated so that proper citations can be prepared.
5. Recommend measures to control and abate safety and health hazards in tunneling and underground work.

Course Number: 303

Course Title:

CONCRETE, FORMS AND SHORING

Course Description: The course introduces students to the constituent materials of concrete and the attributes of quality concrete. It includes hot and cold weather construction operations, concrete placing practices, and inspection procedures. Curing of concrete, form removal, and ASTM standards on sampling concrete are discussed. The course includes laboratories for making concrete and for testing hardened concrete. Reinforced concrete pre- and post- stressing of concrete, and lift-slab construction are also covered. ANSI and OSHA standards are discussed.

Course Highlights: Students participate in a hands-on session on the mixing of concrete.

Course Objectives: Students should be able to:

1. Name materials used in the preparation of concrete and explain the effects of varying the percentage of each.
2. Identify factors in form fabrication that ensure that the hazards of concrete handling and pouring are minimized.
3. Identify additional hazards introduced by weather and list the proper hazard/quality control measures.
4. Describe sampling and testing methods used in controlling concrete strength and quality.
5. Identify appropriate OSHA standards for hazards involving concrete.
6. Identify hazards involved in lift-slab operations and standards that apply.

Course Number: 304

Course Title:

POWER PRESS GUARDING

Course Description: The course intensively examines the specific requirements of 29 CFR 1910.217, Mechanical Power Presses. Part revolution and full revolution clutch mechanisms are discussed in detail, with related hazards and guarding methods. Students will operate presses and the stop-time meter, determine appropriate safeguards, and analyze press operations.

Course Highlights: A field inspection is scheduled, followed by a discussion of hazards observed.

Course Objectives: Students should be able to:

1. Differentiate between the various requirements of 29 CFR 1910.217 and explain the implications of each.
2. Conduct inspections and detect mechanical power press hazards.
3. Identify the guards/devices required at worksites.
4. Describe several appropriate approaches to the problem of guarding press brakes.

Course Number: 305

Course Title:

OSHA TECHNICAL UPDATE - SAFETY

Course Description: The course provides experienced CSHOs with current technical information on significant topics in the safety area. Topics include: new safety standards, National directives, hazard identification and abatement methods, and recent developments in areas such as machinery and machine guarding, trenching, scaffolds, electrical and hazard communication. The course is geared to CSHOs who have completed advanced safety courses over five years ago.

Course Highlights: A segment on robotics utilizes working models.

Course Objectives: Students should be able to:

1. Identify the scope and application of recently adopted safety standards and National directives.
2. Identify recent developments in areas such as machine guarding, and electrical and hazardous materials.
3. Apply demonstrated principles to hazard recognition and abatement assistance.
4. Describe the hazards of Robot installations and apply the proper related standards.

Course Number: 306

Course Title:

SAFETY AND HEALTH FOR GRAIN HANDLING OPERATIONS

Course Description: The course familiarizes students with the safety and health aspects of the grain handling industry. It covers: terminology, processes, equipment, and mechanical/electrical safeguards. Also discussed are common grain handling health hazards such as dusts, pesticides, and fumigants. Course materials include case histories and a review of OSHA enforcement procedures.

Course Highlights: Demonstrations focus on working models of an elevator leg, a grain dryer and a dust collection system.

Course Objectives: Students should be able to:

1. Define terminology associated with grain handling.
2. Identify and describe all phases of grain handling operations.
3. Describe safety and health hazards in grain handling operations.
4. Describe methods and approaches that can be used to achieve abatement for identified safety and health hazards.
5. Identify appropriate OSHA standards for hazards found in grain handling operations.

Course Number: 307

Course Title:

SAFETY AND HEALTH IN SAWMILLS

Course Description: The course introduces the basic components of sawmill operations, from log handling to finished products. In each area, hazards, proper controls, and related OSHA standards are discussed in detail. Emphasis is placed on the particular hazards found in mills of various sizes and types.

Course Highlights: A visit to a sawmill is followed by a review of the problems observed.

Course Objectives: Students should be able to:

1. Define terminology associated with sawmills.
2. Identify various kinds of sawmill machinery and describe the function of each.
3. Identify hazards and/or unsafe work procedures that may be encountered in sawmill operations.
4. Describe methods and approaches that can be used to achieve abatement.
5. Identify OSHA regulations that apply to sawmill operations.

Course Number: 308

Course Title:

PRINCIPLES OF SCAFFOLDING

Course Description: The course details information on the safety aspects of scaffolding. Students are introduced to scaffolding operations from installation to dismantling. Topics include: standing scaffolds, suspension scaffolds, and interpretation of related standards.

Course Highlights: Installation and dismantling methods are demonstrated and, when weather permits, a one-day field exercise is conducted.

Course Objectives: Students should be able to:

1. Identify hazardous conditions related to footings and anchorages (unstable conditions).
2. Determine maximum loads and planking requirements.
3. Determine proper types of guarding, such as guardrails, toeboards, etc., for maximum employee protection.
4. Identify various types of fall protection.
5. Describe appropriate OSHA standards for hazards encountered in the use of scaffolds.

Course Number: 309

Course Title:

ELECTRICAL STANDARDS

Course Description: This course is intended for students who have a background in basic electricity. The course will familiarize students with the hazards associated with electrical installations and equipment. Emphasis is placed on controlling these hazards by application of OSHA standards and requirements. Topics include hazard recognition, grounding requirements, and overcurrent protection for both portable and fixed equipment. Participants are given training in inspection procedures using electrical test equipment.

Course Highlights:

1. Electrical circuit test equipment is provided for hands-on use.
2. A field inspection is scheduled to provide hands-on experiences with electrical test equipment; observed hazards are discussed in a follow-up session.

Course Objectives: Students should be able to:

1. Discuss the adverse effects of electrical current on the human body with respect to voltage, current path, and the duration of exposure.
2. Detect electrical hazards and determine which OSHA standard to apply in order to achieve abatement.
3. Operate electrical circuit test equipment in a safe and effective manner.
4. Use the National Electrical Code to achieve optimum workplace safety.

Course Number: 309A

Course Title:

ELECTRICAL STANDARDS

Course Description: This shortened version of #309 is designed to provide the students with the hazards associated with electrical installations and equipment. Emphasis is placed on controlling these hazards by application of OSHA standards and requirements. Topics include: grounding requirements, and overcurrent protection for both portable and fixed equipment.

Course Highlights: Electrical hazard recognition and OSHA standards.

Course Objectives: Students should be able to:

1. Discuss the effects of electrical current on the human body with respect to voltage, current path, and the duration of exposure.
2. Detect electrical hazards and determine which OSHA standard to apply in order to achieve abatement.

Course Number: 310

Course Title:

APPLIED SPRAY FINISHING AND COATING PRINCIPLES

Course Description: The course provides students with information concerning spray finishing and coating operations. Topics include: related equipment and materials, spray booths, safety and health hazard analysis, applicable NFPA and OSHA standards, engineering controls and work practices, and personal protective equipment.

ourse Highlights: Demonstrations feature a variety of spray equipment.

ourse Objectives: Students should be able to:

1. Define terms used in spray finishing and coating operations.
2. Locate and apply OSHA safety and health standards, policies, and procedures that are applicable to spray finishing and coating operations.
3. Identify common violations of OSHA standards that are applicable to spray finishing and coating operations and propose abatement actions.
4. Identify NFPA standards that are applicable to spray finishing and coating operations.
5. Identify and explain the equipment used in various spray finishing processes.

Course Number: 320

Course Title:

ADVANCED NOISE CONTROL

Course Description: The course provides in-depth discussion and application of the principles of noise control by engineering methods. Noise control through absorption, transmission loss, silencers, vibration isolation, and damping will be covered through lecture and problem sessions. Significant developments in noise measurement techniques and instrumentation will be discussed.

Course Highlights: Noise control principles are applied to solve industrial noise problems.

Course Objectives: Students should be able to:

1. Select appropriate engineering control methods based on the nature of the noise source and on room acoustics.
2. Identify costs associated with specific control techniques.
3. Recommend engineering and administrative control options based on cost, production requirements, and practicality.
4. Calculate expected noise reductions for selected control methods.

Course Number: 321

Course Title:

APPLIED FOUNDRY PRINCIPLES

Course Description: The course is designed to increase the student's knowledge of foundry principles and production practices and hazards. An industrial scale facility is used for training in the principles of molding, core-making, sand preparation and testing, die and investment casting, melting and pouring both ferrous and non-ferrous metals, cleaning, and finishing.

Course Highlights: Hands-on training focuses on foundry processes, related hazards, and effective abatement methods.

Course Objectives: Students should be able to:

1. Define terms specific to foundry operations.
2. Identify materials used in various foundry processes.
3. Describe mold making, melting, metal pouring, and cleaning operations which are performed in a foundry.
4. Recognize safety and health hazards in foundry operations.
5. Recommend effective abatement measures for safety and health hazards in foundry operations.

Course Number: 322

Course Title:

APPLIED WELDING PRINCIPLES

Course Description: The course is designed to increase the student's knowledge of the processes and hazards associated with welding, cutting, and brazing operations. Topics include: the various types of welding, cutting, and brazing processes along with the equipment associated with these processes, proper selection and use of each process, and safety and health hazard recognition and control.

Course Highlights: Various types of welding equipment are used in demonstrations and hands-on exercises.

Course Objectives: Students should be able to:

1. Describe terms specific to welding operations.
2. Describe various types of welding, cutting, and brazing equipment.
3. Identify safety and health hazards associated with welding.
4. Recommend methods to correct welding safety and health hazards.
5. Identify appropriate OSHA standards for welding operations.

Course Number: 323

Course Title:

OSHA TECHNICAL UPDATE - HEALTH

Course Description: The course provides experienced CSHOs with current technical information on significant topics in the health area. Topics include: new health standards, national directives, and recent developments in areas such as toxicology, noise, radiation, respiratory protection, industrial hygiene instrumentation, and hazard abatement methods. The course will be most beneficial to CSHOs who have completed advanced health courses over five years ago.

Course Highlights: Input is provided from the OSHA National Office on new health standards and policies.

Course Objectives: Students should be able to:

1. Describe new health standards and national directives.
2. Identify recent developments in areas such as toxicology, noise, radiation, and respiratory protection.
3. Recommend hazard abatement methods for selected hazards.

Course Number: 324

Course Title:

SAFETY AND HEALTH IN THE MOLDED PRODUCTS INDUSTRIES

Course Description: The course introduces students to the processes and equipment used in the plastics and rubber industries. Major topics include: molding equipment and processes, safety and health hazard recognition, evaluation techniques, and effective control measures.

Course Highlights:

1. Hands-on training and demonstrations feature molding equipment.
2. A field exercise is conducted at a molded products plant.

Course Objectives: Students should be able to:

1. Identify relevant processes in the plastics and rubber industries.
2. Describe safety and health hazards associated with processes in these industries.
3. Define terms used in the molded products industries.
4. Recommend effective controls for safety and health hazards.
5. Identify OSHA regulations that apply to the molded products industries.

Course Number: 325

Course Title:

SAFETY AND HEALTH IN THE TEXTILE INDUSTRY

Course Description: The course familiarizes students with the processes and equipment in the textile industry. Topics include: OSHA regulations, safety and health hazard recognition, evaluation methods, and effective hazard control measures encountered in this industry.

Course Highlights: Hands-on training uses textile mill equipment.

Course Objectives: Students should be able to:

1. Identify processes and equipment used in the textile industry.
2. Describe safety and health hazards associated with specific operations.
3. Design sampling strategies for evaluation of hazards.
4. Identify OSHA regulations that apply to the textile Industry.
5. Describe selected abatement measures used in the textile industry.

Course Number: 326

Course Title:

HEALTH HAZARDS IN THE CONSTRUCTION INDUSTRY FOR SAFETY PERSONNEL

Course Description: The course focuses on the recognition and evaluation of health hazards in the construction industry. Topics include identifying the health hazards associated with: abrasive blasting, asbestos, confined spaces, demolition, roofing, painting and welding. Health hazard recognition, proper evaluation methods, standards and regulations, and inspection procedures are also covered.

Course Highlights:

1. Hands-on use of monitoring equipment is provided.
2. Workshops concentrate on hazard recognition.

Course Objectives: Students should be able to:

1. Define health terms used in construction operations.
2. Describe common health hazards in various construction operations.
3. Identify appropriate evaluation methods for air contaminants in the construction industry.
4. Describe OSHA health standards applicable to construction operations.
5. Recommend appropriate abatement methods.

Course Number: 327

Course Title:

ADVANCED TOXICOLOGY: RISK ASSESSMENT OF INDUSTRIAL CHEMICALS

Course Description: The course is designed for students who are familiar with industrial hygiene and the basic principles of toxicology. The focus of the course will be on quantitative risk assessment of chemicals which represent occupational health hazards. Topics include the process of risk assessment, determination of significant risk, and application to selected chemicals found in the workplace.

Course Highlights: Workshops permit practical experience using the principles of toxicology.

Course Objectives: Students should be able to:

1. Define terms used in toxicology.
2. Describe mechanisms of toxicity and relate this information to exposure for specific chemicals.
3. List major findings of relevant epidemiological studies conducted for selected chemicals.
4. Describe the process of risk assessment.
5. Apply principles of risk assessment to toxicological data.

Course Number: 328

Course Title:

INDUSTRIAL HYGIENE CHEMISTRY

Course Description: The course focuses on laboratory analysis of workplace contaminants. Analytical techniques, methods, and procedures used for analyzing industrial hygiene samples are discussed. Topics include: microscopy, spectroscopy, chromatography, x-ray analysis, and mass spectrometry.

Course Highlights:

1. Hands-on training utilizes laboratory instrumentation.
2. An opportunity to tour the OSHA National Analytical Laboratory is offered.

Course Objectives: Students should be able to:

1. Identify appropriate analytical methods for agents commonly encountered in the workplace.
2. Interpret analytical results.
3. Identify problems common to the sampling and analysis of workplace contaminants.

Course Number: 330

Course Title:

SAFETY AND HEALTH IN THE CHEMICAL INDUSTRY

Course Description: The course focuses on the recognition and evaluation of safety and health hazards in the chemical industry. Major topics include: processes, equipment, and materials commonly found in the chemical industry along with safety and health hazard recognition, related OSHA regulations, proper inspection procedures, and effective hazard control techniques.

Course Highlights: Models are used to demonstrate chemical plant designs.

Course Objectives: Student should be able to:

1. Define terms commonly used in the chemical process industry.
2. Describe process equipment typically used in unit operations.
3. Describe procedures used to audit process safety.
4. Identify potential hazards associated with unit operations.
5. Describe the elements of an effective emergency response plan.

Course Number: 331

Course Title:

HAZARDOUS WASTE SITE INSPECTION AND EMERGENCY RESPONSE

Course Description: The course is designed to increase the student's knowledge of hazardous waste site operations, safety and health hazards, emergency response procedures, and enforcement issues. Topics include: site operations such as soil removal, decontamination, drilling, clean-up, and treatment; Superfund, RCRA, and SARA requirements; personal protective equipment; and sampling strategies and equipment.

Course Highlights: Students have hands-on training in sampling instrumentation and personal protective equipment, including the wearing of self-contained breathing apparatus.

Course Objectives: Students should be able to:

1. Evaluate common operations at waste sites for safety and health hazard potential.
2. Describe appropriate protective equipment.
3. Develop sampling strategies and use monitoring equipment.
4. Evaluate employer safety and health, and training programs and recommend control/abatement strategies.
5. Describe the differences in emergency response requirements for hazardous waste clean-up sites, RCRA TSD sites, and outside emergency response organizations.
6. Document violations of OSHA standards at hazardous waste sites in accordance with national policy.
7. Choose appropriate protective equipment and decontamination procedures.

Course Number: 332

Course Title:

OCCUPATIONAL HEALTH HAZARD RECOGNITION FOR PHYSCIANS

Course Description: This course is designed for contract and consulting physicians and primary care physicians. Topics include OSHA recordkeeping requirements, access to employee medical records, hazard communication, hearing conservation, biohazards, laboratory hazards, and health hazard recognition in the workplace.

Course Highlights: Physicians tour the Institute's laboratories and view demonstrations of industrial equipment to assist them with surveys and issues relevant to occupational health in the workplace.

Course Objectives: Students should be able to:

1. Give highlights of OSHA's recordkeeping, access to employee medical records, hazard communication, and hearing conservation regulations, with particular emphasis on OSHA's view of physician participation.
2. Discuss the various elements of preparation and performance of an occupational environmental survey.
3. Identify common types of industrial equipment and hazards associated with each.
4. Identify commonly-used industrial hygiene monitoring equipment; describe appropriate conditions for its use; explain in simple terms how they work; understand the importance of calibration procedures; and state generally accepted limits of accuracy for each method.
5. Describe general types of controls for biohazards, noise, and air contaminants.

Course Number: 340

Course Title:

ADVANCED PRINCIPLES OF SAFETY AND HEALTH MANAGEMENT

Course Description: The course is designed for students who are familiar with the basic elements of effective safety and health programs. The course will focus on state-of-the-art safety and health theories. Topics include: the legal responsibilities of a safety and health professional, labor/management safety and health committees, risk management, and environmental safety and health issues.

Course Highlights:

1. Hands-on use of microcomputers is applied to accident/illness analysis.
2. Workshops concentrate on system safety techniques and developing safety action plans.

Course Objectives: Students should be able to:

1. Describe state-of-the-art safety and health theories.
2. Understand the legal responsibilities of the safety and health professional.
3. Explain the value and member composition of safety and health committees.
4. Describe principles of hazard analysis and risk assessment.
5. Identify environmental safety and health issues.

Course Number: 400

Course Title:

SAFETY UPDATE FOR OSHA MANAGERS

Course Description: This course for Federal and State managers and supervisors provides current technical information related to machinery and machine guarding, electrical safety, ergonomics, and other areas, as well as a forum for the exchange of safety-realted information among supervisory personnel. It includes a refresher in the machinery and electrical standards and an update on hazard recognition and evaluation.

Course Highlights: Open discussion of problems in the field is held.

Course Objectives: Students should be able to:

1. Describe state-of-the-art techniques for machine safe guarding and electrical safety.
2. Exchange ideas and concepts related to safety and health with other OSHA managers.
3. Identify the latest standards and interpretations.

Course Number: 420

Course Title:

HEALTH UPDATE FOR OSHA MANAGERS

urse Description: The course, intended for OSHA managers and supervisors, provides current technical information on significant topics in the health area as well as providing a forum for the exchange of health-related information among supervisory personnel. Topics include: new health standards, national directives, and recent developments in areas such as toxicology, noise, radiation, respiratory protection, industrial hygiene instrumentation, and hazard abatement methods.

rse Highlights: Input is provided from the OSHA National Office on new health standards and policies.

rse Objectives: Students should be able to:

1. Describe new health standards and national directives.
2. Identify recent developments in areas such as toxicology, noise, radiation, and respiratory protection.
3. Recommend hazard abatement methods for selected hazards.

Course Number: 500

Course Title:

BASIC INSTRUCTOR COURSE IN OCCUPATIONAL SAFETY AND HEALTH STANDARDS FOR THE CONSTRUCTION INDUSTRY

Course Description: The course is designed for students in the private sector who are interested in developing safety and health programs in the construction industry. Special emphasis is placed upon those areas in construction that are the most hazardous, using OSHA standards as a guide. Course participants are briefed on effective instructional approaches and the effective use of visual aids and handouts.

Course Highlights:

1. Demonstrations and hands-on use of various construction tools and equipment are featured.
2. Participants are issued certification cards upon successful completion of the course, enabling them to conduct both 10- and 30-hour construction safety and health courses.

Course Objectives: Students should be able to:

1. Define construction terms found in OSHA standards.
2. Present effective safety and health training programs in accordance with OSHA construction standards, regulations, and guidelines.
3. Identify hazards and determine appropriate standards.
4. Prepare reports citing the conditions found.
5. Identify methods to abate hazards.

Course Number: 501

Course Title:

A GUIDE TO VOLUNTARY COMPLIANCE IN SAFETY AND HEALTH

Course Description: The course is intended for private sector personnel from all types of industries. It presents detailed information on how the provisions of the Occupational Safety and Health Act may be implemented in the workplace. The primary focus is on the basics of the Act. The course includes an introduction to general industry standards and provides an overview of the requirements of the more frequently referenced standards. A segment of the course covers rights and responsibilities under the Act, contests, recordkeeping, Voluntary Protection Programs, and related topics.

Course Highlights: Successful completion of this course qualifies the student to conduct both a 10-hour and 30-hour voluntary compliance course and issue cards to participants certifying course completion.

Course Objectives: Students should be able to:

1. Locate OSHA safety and health standards, policies, and procedures.
2. Describe the utilization of OSHA standards and regulations to supplement an on going safety and health program.
3. Identify common violations of OSHA standards and propose abatement actions.
4. Describe appropriate abatement procedures for safety hazards.
5. Describe how to conduct internal training on OSHA regulations.

Course Number: 502

Course Title:

UPDATE FOR CONSTRUCTION INDUSTRY OUTREACH TRAINERS

Course Description: The course is designed for personnel in the private sector who have completed Course Number 500, Basic Instructor Course in Occupational Safety and Health Hazards for the Construction Industry, and who are active trainers in the outreach program. Topics include: recordkeeping requirements, OSHA construction inspection policies and procedures, confined space hazards, and competent person requirements.

Course Highlights: Each participant is provided the opportunity to give a presentation on a safety and health related topic.

Course Objectives: Students should be able to:

1. Recommend current OSHA construction requirements and policies.
2. Describe new construction standards.
3. Identify training material resources.
4. Apply techniques and resources used by other construction outreach trainers.
5. Provide a general overview of construction safety practices.

Course Number: 503

Course Title:

UPDATE FOR VOLUNTARY COMPLIANCE OUTREACH TRAINERS

Course Description: The course is designed for private sector personnel who have completed Course Number 501, a Guide to Voluntary Compliance in Safety and Health, and who are active trainers in the outreach program. This update course covers changes in such topics as OSHA inspection policies and procedures, hazardous materials, electrical hazards, fire protection, and walking-working surfaces.

Course Highlights: Each participant is provided the opportunity to give a presentation on a safety and health related topic.

Course Objectives: Students should be able to:

1. Locate and apply recently adopted or revised OSHA safety and health standards, policies, and procedures.
2. Utilize recent changes in OSHA standards and regulations to supplement an ongoing safety and health program.
3. Identify common violations of OSHA standards and propose abatement actions.
4. Describe recent developments in abatement procedures for selected safety hazards.
5. Conduct internal training on OSHA regulations.

Course Number: 520

Course Title:

INTRODUCTION TO THE SHIPYARD COMPETENT PERSON PROGRAM

Course Description: The course is intended for students in the private sector and familiarizes them with the duties of a competent person as defined by OSHA maritime regulations. Topics include: hazards associated with confined space entry, respiratory protection, explosive limits and atmospheres, and related OSHA regulations and procedures. Use of combustible gas, oxygen, CO meters, and detector tubes is also covered.

Course Highlights:

1. Laboratories feature the calibration and operation of instruments used by competent persons.
2. The flame propagation unit is demonstrated.

Course Objectives: Students should be able to:

1. Explain the instructions issued by a National Fire Protection Association Certified Marine Chemist.
2. Define hazards associated with confined spaces.
3. Use and interpret the readings of an oxygen meter, a carbon monoxide indicator, and a combustible gas indicator.
4. Perform tests and inspections required by OSHA regulations and maintain the required logs.
5. List the duties of a shipyard competent person as defined by OSHA.

Course Number: 521

Course Title:

OSHA GUIDE TO VOLUNTARY COMPLIANCE IN THE HEALTH AREA

Course Description: The course is a sequel to Course 501 for private sector personnel. It is intended for students who are interested in increasing their knowledge of industrial hygiene practices and related OSHA regulations and procedures. Topics include: permissible exposure limits, OSHA health standards, respiratory protection, engineering controls, hazard communication, and sampling instrumentation.

Course Highlights: Workshops concentrate on health hazard recognition and the use of OSHA standards.

Course Objectives: Students should be able to:

1. Define terms relating to OSHA's health program.
2. Using the OSHA code of regulations, locate the permissible exposure limits for selected substances.
3. Identify potential health hazards.
4. Describe the procedure for evaluating the workplace.
5. Identify control measures to abate health hazards.

Course Number: 600

Course Title:

COLLATERAL DUTY COURSE FOR OTHER FEDERAL AGENCIES

Course Description: The course introduces Federal agency collateral duty (part-time) safety and health personnel to the Occupational Safety and Health Act, Executive Order 12196, 29 CFR 1960, and 29 CFR 1910. It should enable them to recognize basic safety and health hazards in their own workplace and effectively assist agency safety and health officers with inspection and abatement efforts.

Course Highlights: A workplace inspection and use of laboratory equipment are included.

Course Objectives: Students should be able to:

1. Describe the Occupational Safety and Health Act, 29 CFR 1960, and 29 CFR 1910.
2. Explain and apply workplace inspection procedures consistent with established policies, procedures, and directives.
3. Identify selected safety and health hazards and the corresponding OSHA standards.
4. Describe major provisions of Executive Order 12196.
5. Describe abatement methods for selected safety and health hazards.

Course Number: 601

Course Title:

OCCUPATIONAL SAFETY AND HEALTH COURSE FOR OTHER FEDERAL AGENCIES

Course Description: The course is designed for full-time Federal agency safety and health officers or supervisors assigned responsibilities under Executive Order 12196 and 29 CFR 1960. Topics include: an overview of the Occupational Safety and Health Act, Federal agency responsibilities with respect to OSHA, safety and health program organization, hazard recognition, and workplace inspection techniques. Participants take an in-depth look at various OSHA standards. Actual or simulated workplace inspections are included. Course completion assists in preparing participants to train collateral duty personnel.

Course Highlights: A walkthrough inspection and evaluation of a government facility are featured.

Course Objectives: Students should be able to:

1. Describe OSHA safety and health regulations, including 29 CFR 1910, 29 CFR 1926, and 29 CFR 1960.
2. Identify selected hazards found in the workplace.
3. Describe appropriate abatement methods for selected hazards.
4. Describe major provisions of Executive Order 12196.
5. Explain and apply workplace inspection procedures consistent with established policies, procedures, and directives.

Course Number: 713

Course Title:

INTRODUCTION TO THE OSHA COMPUTERIZED INFORMATION SYSTEM AND ELECTRONIC MAIL

Course Description: This course provides hands-on training in the use of the OSHA Computerized Information System (OCIS) and electronic mail (E-mail). Accessing OCIS files and file structures are discussed. Use of E-mail for the distribution of memos and other documents is also covered in the last 1/2 day.

Course Highlights:

1. During the hands-on sessions, participants will search the databases to solve sample problems and to access and file electronic mail.
2. Participants will be able to raise issues which they may have encountered in their offices.

Course Objectives: Students should be able to:

1. Understand the extent of information available in each database.
2. Search any database using the menus.
3. Access and file electronic mail.

CURRENT COURSE SCHEDULE/PREREQUISITES

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